

MEMORANDUM

July 1, 1975

To: Gerry Calkins
 From: Grover Scott Jeane II
 Subject: Woodland STP

I visited the Woodland STP in response to your request for information concerning the characteristics of the solids entering this plant. In conjunction with the influent sampling, composite effluent samples were obtained for efficiency analysis.

The sampling took place over the 27 and 28th of May. The influent composite was over a 29-hour period while the effluent was for a 5-hour period. A pinkish-colored influent was noted at 2 p.m. the 28th of May and a grab sample was collected.

The plants total flow was measured at 155,000 gallons per day from their Sparling totalizer. The field and laboratory results are discussed below.

Solids Analysis:

The composite influent and the grab samples were very similar in solids characteristics. The influent is 2 to 3 times higher in total solids, total non-volatile solids and total suspended solids than several regional STP's of similar size. Yet the solids profile of the Woodland STP is very similar to that of the Vancouver westside plant.

Solids (mg/l)	STP's				
	Woodland		Vancouver Westside	Wilkeson	Carbonado
	Composite	Grab			
Total Solids	643	500	741	243	202
Total Non Vol. Solids	221	231	335	170	120
Total Sus. Solids	286	194	197	60	33
Total Sus. Non Vol. Solids	75	28	22	14	4

The Woodland STP is not supposed to be receiving any industrial effluents but Woodland's effluent compares closely with Vancouver's STP which receives heavy industrial discharges. Woodland's influent is about 10 to 15% higher in total

volatile solids than the other plants. Interpretation of the solids analysis does not support the theory of the presence of a colloidal clay or a very fine inorganic suspension. The unknown solids are of a volatile nature.

Discharge Values:

In conjunction with the solids sampling, composite samples were collected and analyzed to determine if the plant was meeting the discharge conditions of their permit. Permit values and other important parameters are presented below.

	Permit Conditions	Survey Observations
BOD	30 mg/L 120 #/day	10 mg/L, 13.35 lbs/day
TSS	30 mg/L 120 #/day	3 mg/L, 4.01 lbs/day
NO ₃ -N	-----	7.68 mg/L, 10.25 lbs/day
NH ₃ -H	-----	18.0 mg/L, 24.0 lbs/day
T-PO ₄ -P	-----	11.5 mg/L, 15.35 lbs/day
pH	6.5 to 8.5 S.U.	7.2
Total Coliform	-----	600 col/100 ml
Fecal Coliform	200 col/100 ml	10 col/100 ml
Flow	0.48 MGD	0.16 MGD

The plant effluent meets the permit special conditions. Plant equipment and grounds are well maintained.

Laboratory Technique Evaluations:

Samples were split and analyzed by both the operator and DOE's Laboratory. The results are as follows:

		Influent		Effluent	
		DOE - Woodland		DOE - Woodland	
	BOD mg/L	*	580	10	67
Composite - T.S.S.	mg/L	286	464	3	11.5
Grab - T.S.S.	mg/L	194	190		

* = insufficient sample volume

The operator's laboratory results agree fairly well with our results.

GSJ:ee

STP Survey Report Form

Efficiency Study

City Woodland Plant Type Bio-Disc Pop. Served _____ Design Capacity 0.48 MGD
 Receiving Water Lewis River Perennial X Intermittent _____
 Date 6-28-75 Survey Period _____ Survey Personnel G. S. Jeane II
 Comp. Sampling Frequency See cover letter Sampling Alequot _____
 Weather Conditions (24 hr) dry Are facilities provided for complete by-pass of raw sewage? _____ Yes _____ No/Frequency of bypass _____
 Reason for bypass _____ Is bypass chlorinated? _____ Yes _____ No
 Was DOE Notified? _____ Discharge - Intermittent _____ Continuous _____

Plant Operation

Total flow 155,752 gal/day How measured Sparling conical propeller
 Maximum flow _____ Time of Max. _____
 Minimum flow _____ Time of Min. _____
 Pre Cl₂ _____ #/day Post Cl₂ _____ #/day

Field ResultsInfluentEffluent

<u>Determinations</u>	<u>Max.</u>	<u>Min.</u>	<u>Mean</u>	<u>Median</u>	<u>Max.</u>	<u>Min.</u>	<u>Mean</u>	<u>Median</u>
Temp °C								
pH (Units)								
Conductivity (µmhos/cm ²)								
Settleable Solids (mls/l)								

Laboratory Results on Composites

<u>Laboratory No.</u>	<u>Influent</u> <u>Grab</u>	<u>Effluent</u> <u>24-hr. composite</u>	<u>% Reduction</u>
5-Day BOD ppm	<u>350 est.</u>	<u>10</u>	<u>97</u>
COD ppm	<u>475</u>	<u>51</u>	
F.S. ppm	<u>500</u>	<u>263</u>	
F.N.V.S. ppm	<u>231</u>	<u>184</u>	
F.S.S. ppm	<u>194</u>	<u>3</u>	<u>98</u>
N.V.S.S. ppm	<u>28</u>	<u>0</u>	
pH (Units)	<u>7.3</u>	<u>7.2</u>	
Conductivity (µmhos/cm ²)	<u>600</u>	<u>490</u>	
Turbidity (JTU's)	<u>144</u>	<u>9</u>	

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual	
		Total Coliform	Fecal Coliform	Fecal Strep	15 sec.	3 min.
75-2062	1430	600	<10		0.3	0.4

Additional Laboratory Results

NO ₃ -N ppm	-	
NO ₂ -N ppm	-	
NH ₃ -N ppm	-	
T. Kjeldahl-N ppm	-	See report
O-PO ₄ -P ppm	-	
T-PO ₄ -P ppm	-	

Operator's Name Mell Long Phone No. 225-7007

Furnish a flow diagram with sequence and relative size and points of chlorination.

Type of Collection System

☐ Combined ☐ Separate ☐ Both

Estimate flow contributed by surface or ground water (infiltration)

_____ MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry _____

Dry _____

Wet _____

Wet _____

COMMENTS: _____

